

What is claimed is:

1. A recording medium on which is recorded a data structure comprising:
 - first data and second data which are different from each other in type and formed of a respective plurality of data units;
 - a first data unit descriptor table and a second data unit descriptor table in which information on the first data units and the second data units is respectively recorded as data unit descriptors; and
 - a first program descriptor table and a second program descriptor table in which information on one or more data units forming respective programs is stored in a program descriptor of a corresponding program in the form of information on respective data unit descriptors, wherein the information on the first data units, which are to be reproduced after the first data units are linked to the second data units, is included in the program descriptor of the second program descriptor table.
2. The recording medium of claim 1, wherein the first data is video data of still pictures and the second data is audio data.
3. The recording medium of claim 1, wherein predetermined information in the first data unit descriptor is copied, as the information on the first data unit, to the program descriptor of the second program descriptor table.
4. The recording medium of claim 4, wherein the predetermined information is information on a recording time of the first data unit.
5. The recording medium of claim 1, wherein where the information on the first data unit in the second program descriptor table is not the same as the corresponding information on the first data unit in the first data unit descriptor, the information on the first data unit in the second program descriptor table is updated so that the information is the same as the information on the first data unit in the first data unit descriptor.

1 6. A recording method comprising:
2 recording first data and second data, which are different from each other in type and
3 each formed of a respective plurality of data units, on a recording medium; and
4 recording a first data unit descriptor table and a second data unit descriptor table on the
5 recording medium, wherein information on the first data units and the second data units is
6 stored as data unit descriptors in the first and second data unit descriptor tables, respectively;
7 recording a first program descriptor table and a second program descriptor table on the
8 recording medium, wherein information on one or more data units forming respective
9 programs are stored as a program descriptor of a corresponding program in the form of
10 information on respective data unit descriptors, and wherein the information on at least one of
11 the plurality of the first data units, which is to be reproduced after the at least one of the
12 plurality of first data units is linked to at least one of the plurality of the second data units, is
13 included in the program descriptor of the second program descriptor table.

1 7. The recording method of claim 6, wherein the first data is video data of still
2 pictures and the second data is audio data.

1 8. The recording method of claim 6, wherein predetermined information of the at
2 least one first data unit descriptor is copied to and recorded in the program descriptor of the
3 second program descriptor table, as the information on the first data unit.

1 9. The recording method of claim 8, wherein the predetermined information is the
2 information on a recording time of the first data unit.

1 10. The recording method of claim 6, furthering comprising:
2 determining whether information on the first data unit in the second program descriptor
3 table is the same as the information on the first data unit in the first data unit descriptor; and

when the two items of information are not the same, updating the information on the first data unit in the second program descriptor table so as to become the same as the information on the first data unit in the first data unit descriptor, and recording the updated information.

11. A reproducing method of reproducing data from a recording medium on which first data and second data which are different from each other in type and formed of a plurality of data units are recorded; a first data unit descriptor table and a second data unit descriptor table, in which information on the first data units and the second data units are respectively stored as data unit descriptors, are recorded; and a first program descriptor table and a second program descriptor table in which information on one or more data units forming respective programs are stored in the program descriptor of the corresponding program in the form of information on respective data unit descriptors, wherein in the program descriptor of the second program table information for linking the first data and the second data are recorded, the reproducing method comprising:

reading the second program descriptor having the information on the program to be reproduced, and then reading the information on the first data unit descriptor and the second data unit descriptor related to the corresponding program, from the read second program descriptor;

reading the corresponding data unit descriptors from the first and second data descriptor tables corresponding to the read first and second data unit descriptors; and

synchronizing and reproducing the first data unit and the second data unit indicated by the read first and second data unit descriptors.

12. The reproducing method of claim 11, wherein the synchronizing and reproducing further comprises:

temporarily storing the first data units indicated by the first data unit descriptors corresponding to the program to be reproduced, to a memory; and

reproducing the second data units indicated by the second data unit descriptors
corresponding to the program to be reproduced, and at the same time synchronizing, to the
second data, and reproducing the first data units after reading the first data units stored in the
memory.

13. The reproducing method of claim 11, wherein the first data is video data of still
pictures and the second data is audio data.

14. The reproducing method of claim 11, wherein the information on the first data
unit, which is to be reproduced after the first data unit is linked to the second data unit, is
stored, as linkage information, in the program descriptor of the second program descriptor
table, and predetermined information in the first data unit descriptor is copied, as the
information on the first data unit, to the program descriptor of the second program descriptor
table.

15. The reproducing method of claim 14, wherein the predetermined information is
information on a recording time of the first data unit.

16. The reproducing method of claim 14, further comprising:
determining whether the information on the first data unit in the second program
descriptor table is the same as information on the first data unit in the first data unit descriptor;
and

when the two items of information are not the same, updating the information on the
first data unit in the second program descriptor table so as to become the same as the
information on the first data unit in the first data unit descriptor, and recording the updated
information.

17. The reproducing method of claim 14, further comprising:

2 determining whether the information on the first data unit in the second program
3 descriptor table is the same as the information, which corresponds to the information on the
4 first data unit, on the first data unit in the first data unit descriptor; and
5 when the two items of information are not the same, reproducing the second data unit
6 while withholding reproduction of the first data unit.

1 18. A recording apparatus for recording data of different types on a recording
2 medium, the recording apparatus comprising:
3 a first signal processor which formats a first data stream input into independent units,
4 codes the formatted first data units, and provides the coded first data units to the recording
5 medium;
6 a second signal processor which formats a second data stream input into independent
7 units, codes the formatted second data units, and provides the coded second data units to the
8 recording medium; and
9 a system controller which generates a first data unit descriptor table and a second data
10 unit descriptor table, in which information on the first data units and the second data units are
11 respectively stored as data unit descriptors, and a first program descriptor table and a second
12 program descriptor table, in which information on one or more data units forming respective
13 programs are stored in a program descriptor of a corresponding program in the form of
14 information on respective data unit descriptors, wherein information on the first data unit,
15 which is to be reproduced after being linked to the second data unit, is included in the program
16 descriptor of the second program descriptor table.

1 19. The recording apparatus of claim 18, wherein the first data is video data of at
2 least one still picture and the second data is audio data.

1 20. The recording apparatus of claim 18, wherein predetermined information of the
2 first data unit descriptor, as information on the first data unit, is copied to the program
3 descriptor of the second program descriptor table.

1 21. The recording apparatus of claim 20, wherein the predetermined information is
2 information on a recording time of the first data unit.

1 22. The recording apparatus of claim 18, wherein the system controller determines
2 whether information on the first data unit in the second program descriptor table is the same as
3 the corresponding information on the first data unit in the first data unit descriptor, and, where
4 the information is not the same, information on the first data unit in the second program
5 descriptor table is updated so that the information in the second program descriptor table is the
6 same as the information on the first data unit in the first data unit descriptor.

1 23. An apparatus for reproducing data from a recording medium on which first data
2 and second data, which are different from each other in type and formed of a plurality of data
3 units, are recorded; a first data unit descriptor table and a second data unit descriptor table,
4 which include data unit descriptors having information on respective data units, are recorded;
5 and a first program descriptor table and a second program descriptor table in which
6 information on one or more data units forming respective programs are stored in the program
7 descriptor of the corresponding program in the form of information on respective data unit
8 descriptors, are recorded, wherein information for linking the first data and the second data is
9 recorded in the program descriptor of the second program table, the reproducing apparatus
10 comprising:

11 a system controller which reads the second program descriptor having the information
12 on the program to be reproduced, reads the information on the first data unit descriptor and the
13 second data unit descriptor related to the corresponding program from the read second program
14 descriptor, and reads corresponding data unit descriptors from the first data descriptor table
15 and the second data descriptor table corresponding respectively to read information on the first
16 data unit descriptor and the second data unit descriptor;

17 a memory;

18 a first signal processor, which temporarily stores the corresponding first data unit
19 indicated by the read first data unit descriptor to the memory, decodes the first data unit stored
20 in the memory, and reproduces the decoded first data unit after adjusting a timing of the
21 decoded first data unit to that of the second data unit; and

22 a second signal processor which decodes the corresponding second data unit indicated
23 by the read second data unit descriptor and reproduces the decoded second data.

1 24. The reproducing apparatus of claim 23, wherein the first data is video data of
2 still pictures, and the second data is audio data.

1 25. The reproducing apparatus of claim 23, wherein the information on the first data
2 unit, which is to be reproduced after the first data unit is linked to the second data unit, is
3 stored, as linkage information, in the program descriptor of the second descriptor table, and
4 predetermined information in the first data unit descriptor is copied, as the information on the
5 first data unit, to the program descriptor of the second descriptor table.

26. The reproducing apparatus of claim 25, wherein the predetermined information
is information on a recording time of the first data unit.

27. The reproducing apparatus of claim 23, wherein the system controller
determines whether the information on the first data unit in the second program descriptor
3 table is the same as the corresponding information on the first data unit in the first data unit
4 descriptor, and, where the items of information are not the same, the information on the first
5 data unit in the second program descriptor table is updated so that the information is the same
6 as the information on the first data unit in the first data unit descriptor.

1 28. The reproducing apparatus of claim 23, wherein the system controller
2 determines whether the information on the first data unit in the second program descriptor
3 table is the same as the corresponding information on the first data unit in the first data unit
4 descriptor, and, where the items of information are not the same, the second data unit is
5 reproduced while the reproduction of the first data unit is withheld.

1 29. The reproducing apparatus of claim 23, wherein the memory is embedded in the
2 first signal processor.

1 30. An audio-reproduction-dedicated apparatus for reproducing data from a
2 recording medium on which first data and second data which are different from each other in
3 type and formed of a plurality of data units are recorded; a first data unit descriptor table and a
4 second data unit descriptor table, which include data unit descriptors having information on
5 respective data units, are recorded; and a first program descriptor table and a second program
6 descriptor table in which information on one or more data units forming respective programs
7 are stored in the program descriptor of the corresponding program in the form of information
8 on respective data unit descriptors, are recorded, wherein information for linking the first data
9 and the second data is recorded in the program descriptor of the second program table, the
10 audio-reproduction-dedicated apparatus comprising:

11 a system controller which reads the second program descriptor having the information
12 on the program to be reproduced, reads the information on the second data unit descriptor
13 related to the corresponding program from the read second program descriptor, and reads
14 corresponding data unit descriptors from the second data descriptor table corresponding to read
15 information on the second data unit descriptor; and

16 a signal processor which decodes the corresponding data unit indicated by the read
17 second data unit descriptor and reproduces the second data.

1 31. A recording/reproducing apparatus comprising:

2 a memory;

3 a first signal processor which formats first data input into independent units and codes
4 the formatted first data units during recording; and which, during reproduction, temporarily
5 stores a corresponding data unit indicated by a read first data unit descriptor to the memory,
6 decodes the first data unit read from the memory, and reproduces the decoded first data unit
7 after adjusting the timing of the decoded first data unit to that of a corresponding second data
8 unit;

9 a second signal processor which formats second data input into independent units, codes
10 the formatted second data units during recording; and, during reproduction, decodes the
11 corresponding second data unit indicated by a read second data unit descriptor and reproduces
12 the decoded second data unit; and

13 a system controller which:

14 during recording, generates a first data unit descriptor table and a second data unit
15 descriptor table storing information on the first data units and the second data units as data unit
16 descriptors, and generates a first program descriptor table and a second program descriptor
17 table in which information on one or more data units forming respective programs is stored in
18 the program descriptor of the corresponding program in the form of information on respective
19 data unit descriptors, wherein the information on the first data unit to be reproduced after
20 being linked to the second data unit is included in the program descriptor of the second
21 program descriptor table; and,

22 which, during reproduction, reads the second program descriptor having information on
23 the program to be reproduced, reads information on the first data unit descriptor and the
24 second data unit descriptor related to the corresponding program from the read second program
25 descriptor, and reads corresponding data unit descriptors from the first data descriptor table
26 and the second data descriptor table corresponding respectively to read the information on the
27 first data unit descriptor and the second data unit descriptor.

1 32. The recording/reproducing apparatus of claim 31, wherein the first data is video
2 data of still pictures and the second data is audio data.

1 33. The recording/reproducing apparatus of claim 31, wherein the information on
2 the first data unit which is to be reproduced after the first data unit is linked to the second data
3 unit is stored, as linkage information, in the program descriptor of the second descriptor table,
4 and predetermined information in the first data unit descriptor is copied, as information on the
5 first data unit, to the program descriptor of the second descriptor table.

1 34. The recording/reproducing apparatus of claim 31, wherein the predetermined
2 information is information on a recording time of the first data unit.

1 35. The recording/reproducing apparatus of claim 31, wherein the system controller
2 determines whether the information on the first data unit in the second program descriptor
3 table is the same as the corresponding information on the first data unit in the first data unit
4 descriptor, and, where the items of information is not the same, the information on the first
5 data unit in the second program descriptor table is updated so that the information is the same
6 as the information on the first data unit in the first data unit descriptor.

1 36. The recording/reproducing apparatus of claim 31, wherein the system controller
2 determines whether the information on the first data unit in the second program descriptor
3 table is the same as the corresponding information on the first data unit in the first data unit
4 descriptor, and, where the two items of information are not the same, the second data unit is
5 reproduced while the reproduction of the first data unit is withheld.

1 37. The recording/reproducing apparatus of claim 31, wherein the memory is
2 embedded in the first signal processor.

1 38. A recording method comprising:
2 recording first and second data types on a recording medium, each type formed of a
3 respective plurality of data units;
4 recording a first data unit descriptor table and a second data unit descriptor table, each
5 table relating at least one data unit of each of the first and second types with a respective data
6 unit descriptor; and
7 recording a program descriptor table which relates at least one data unit descriptor of
8 the first type and at least one data unit descriptor of the second type.

1 39. A recording method comprising:
2 recording first and second data types on a recording medium, each type formed of a
3 respective plurality of data units;
4 recording a first descriptor table which relates at least one data unit of the first type
5 with a respective first data unit descriptor; and
6 recording a second descriptor table which relates at least one data unit of the second
7 type with a respective data unit descriptor and with the respective first data unit descriptor of
8 the at least one data unit.

1 40. A data structure for synchronizing reproduction of a data unit of a first type with
2 reproduction of a data unit of a second type from a recording medium, the data structure
3 comprising:
4 a first table which relates a first data unit descriptor with the first data unit; and
5 a second table which relates a second data unit descriptor with the second data unit and
6 which relates the second data unit with the first data unit.